Norsk Tidsskrift for Atferdsanalyse, årgang 37 (2010), nr 3, 119–125

Interview with Julie S. Vargas

Erik Arntzen
Akershus University College

Introduction

Julie S. Vargas (born 1938 in Minneapolis, Minnesota) is an author and educator. She is the oldest daughter of B. F. and Eve Skinner. Dr. Vargas received a bachelor degree in music from Radcliffe College, a master degree in music education from Columbia University, and a Ph.D. in educational research from the University of Pittsburgh. She served as a faculty member at West Virginia University where she taught for more than 30 years in the College of Human Resources and Education. Dr. Vargas was one of the founding editors of *The Behavior Analyst* and a former president of the Association for Behavior Analysis International. Dr. Vargas is President of the B. F. Skinner Foundation, in Cambridge, Massachusetts and author or coauthor of 4 books, including *Behavior Analysis for Effective Teaching* published in 2009. Dr. Vargas is dedicated to disseminating the principles and applications of behavior analysis and behaviorology, and to furthering the work of her father, pioneering behavioral scientist B.F. Skinner.

Question 1: Your father, BF Skinner, had positions at different universities, so you have lived for shorter or longer periods at a number of places in the US. Can you start telling us about where you have lived in the US?

Answer 1: I was born in Minnesota, in a city near the Mississippi River. My family lived there until the fall of 1945. We then moved to Bloomington, Indiana where my father was chair of the Department of Psychology at Indiana University. When my father was asked to give the William James lectures in the fall of 1947, we moved into temporary housing in Cambridge, Massachusetts returning to Cambridge permanently in 1948.

Question 2: As you were growing up, you and your family had some trips to Europe and to Norway. You were, for example, in Norway in 1951. Can you remember how it was visiting Norway when you were 13-years old? You and your husband were in Norway earlier this year. Did you get any impression about the cultural differences between Norway and USA?

Answer 2: My parents took my sister Deborah and me on a trip to Europe in 1951. On that trip we visited Norway. I have few memories of that trip, but I do remember the train ride from Oslo to Bergen. Coming out of dark tunnels you would be blinded by snowy land dropping straight down from the track all the way to the fjords below. When Ernie and I repeated the train ride in 2010 it was still spectacular, but a bit tamer than I had remembered. (Perhaps the more dangerous parts had been rerouted.) In 1951 I remember Bergen as being a small

Julie S. Vargas was awarded as an honorary member of the Norwegian Association for Behavior Analysis at the annual meeting in 2010.

wonderful working fishing village. In our 2010 visit, Bergen had much of the same charm but was bigger and more commercial than I had remembered.

Compared to the USA, Norway struck me as clean and friendly. Ernie and I were in Norway for the Storefjell conference. We were impressed with the courtesy extended us, not only in transportation to and from the airport, but in small matters like making sure we had English-speaking company at meals. The land was beautiful; the view unspoiled by the rows of gas stations, motels, and fast-food eyesores you find so often in the United States.

Ernie and I were aware of the better social services offered in Norway than in the USA, so our impressions were colored by our approval of Norway's system. Still what we observed fit with our prejudices: In a stark difference from the USA, we saw no homeless beggars and almost no overweight Norwegians. Another difference we noted was the greater consistency of ethnicity: tall, athletic (and good looking!) Norwegians and few non-Nordic people. The general tenor in the cities seemed more relaxed than in the US. At one stall in Bergen, operated by the owner, I had a leisurely conversation without any pressure to buy anything.

Question 3: I'll guess that many readers of the Norwegian Journal for Behavior Analysis will be interested in knowing something about how it was to grow up as B.F. Skinner's daughter. How was your relation to your father?

Answer 3: During the time I was growing up, my father wasn't yet widely known. In college in the late 1950's I would be asked whether I was related to Cornelius Otis Skinner or to the Skinner Organ Company rather than to my father. Growing up with him as a father, however, was wonderful. I was very close to my father. When we were little, my father put both my sister and me to bed. I remember asking questions to keep him sitting longer on the side of my bed. For example, I once asked "What is beyond space?" My father turned on the light, made a paper mobius strip and let me trace a line around it to illustrate how space folds back upon itself. I got good at asking questions that required long answers.

During summers on Monhegan Island, my father taught me to sail, made me a workbench complete with vise and taught me how to use hand tools. In the pine woods called "Cathedral Forest", he built moss houses with my sister and me. Back home in Cambridge, we would go on long walks. My father would tell me about whatever he was writing. When I later read his articles, I would think, "I remember that homunculus. We talked about it walking around Fresh Pond." When my father was diagnosed with leukemia, I took a leave of absence from my university so I could spend his last nine months with him. Even now, going through all the photographs, notes, datebooks, manuscript drafts, awards, and other memorabilia I am amazed at how much time he spent with my sister and me.

Question 4: If you were going to rank your father's top three most important contributions to behavior analysis, what would they be?

Answer 4:

First, establishing a new science of operant behavior.

In his early research, my father shifted from a trial format (where an experimenter begins each trial) to a format that permitted continuous actions to be repeated without an experimenter handling the animal during experimental sessions. With his apparatus, the "operant chamber", my father discovered the control over behavior by immediate postcedents. This operant be-

havior radically differed from the stimulus-response behavior of Pavlov upon which Watson had based his analysis. Over five initial years, culminating in *The Behavior of Organisms*, my father systematically investigated operant behavior and how action-postcedent contingencies come under control of properties of antecedents. This began a whole new science of behavior.

Second, analyzing the controls over verbal behavior.

The book *Verbal Behavior* extended the scientific relations my father had investigated to talking, writing, thinking, and language in general. The book is a theoretical work. It shows how areas commonly called "cognitive" can be accounted for by the same principles he had demonstrated in laboratory work. While varying in complexity, contingency relations over verbal behavior do not differ in kind from those over any other behavior.

Third, addressing the design of cultural contingencies

In the summer of 1945, my father wrote *Walden Two* to illustrate how science could enable a community to be more humane and fair than the United States was at the time. People think of the Walden Two community as static. It was not. Walden Two showed *one* possible stage in the use of science to design social contingencies. The whole point of the design was to experiment and evaluate results to continually improve conditions for living.

Twenty-five years later, in *Beyond Freedom and Dignity* my father took up societal contingencies again. All the problems facing humanity, he argued, are behavioral. They could be solved by the science that shows how our behavior results from contingencies that we can change, thus gaining the conditions people call "freedom" and "dignity."

Question 5: Your sister Deborah was raised in an air-crib or a baby tender. The terrible predictions of what was going to happen with Deborah were not confirmed. As I have understood it, she was very healthy and actually had her first cold when she was six. What were your thoughts about your father's invention of the baby tender?

Answer 5: I was six when my sister was born. I remember the aircrib as a wonderful place to hide in when my sister wasn't in her bed. I would climb inside and pull down the shade and no one would find me. Many years later, when Ernie and I had children, they slept in an aircrib. It kept out mosquitos and wasps and in the winter gave a warm place to give baths. When we visited my parents, we borrowed a standard crib and worried about limbs getting stuck between the slats. The aircrib was built to improve on the comfort of an infant, not to add to science. My father did no experiments with it. Aircribs are wonderful infant beds. Unfortunately they don't prevent colds, as my father assumed from comparing Deborah's lack of colds as an infant to mine.

Deborah is still very healthy. She plays tennis almost every day. She walks all over London so fast that it is hard to keep up without jogging now and then. Deborah is still a successful artist. She retired from etching and now draws pastels.

Question 6: In the Skinner Archives at Harvard, a lot of information is collected about the development of the air-crib. At some point a number of the newspaper articles collected turned out to be quite hostile. What are your thoughts about the far-fetched rumors around your sister Deborah? I assume you have read the book by the psychologist Lauren Slater "Opening Skinner's Box" (2004). How do you react when educated people still publish such things even today?

Answer 6: I can hear my father saying, "Oh well." I try to react the same way. One has only so much time, and it is best spent advancing one's own ideas. The less attention hostile writings get, the better.

Question 7: I have read in "A Matter of Consequences" (Skinner, 1983) that your father bought you long-play phonograph and some records around 1950. Was this the start of your interest for music? You have told me that you are a part of an orchestra and also a chorus. Is music an important part of your life?

Answer 7: As a very young child, I would sing songs while my father accompanied me on the piano. My interest in playing an instrument, however, began in Monhegan where, looking through a Sears Roebuck catalog, I saw a guitar and told my father I would like one. A $9.95 Silvertone guitar arrived in the mail a week later. It came with a pamphlet called, "How to Play the Guitar in Five Minutes." Five minutes later I still could not play the guitar and gave up. My father picked up the guitar and started going through the little book, but he had even more trouble placing his fingers than I had. I said, "Here, Daddy. Let me show you." Soon I had mastered two chords with which I could accompany myself singing songs like "Streets of Loredo." A third chord and I was off and running. In high school I took up the violin and in college switched to viola. I also sang in the Harvard-Radcliffe chorus and performed once with the Boston Symphony Orchestra. My father sat in the audience with, he later told me, tears in his eyes. I joined amateur orchestras when living in New York and Pittsburgh and joined the West Virginia University Orchestra when we moved to West Virginia. Since living in Cambridge, I haven't played in an orchestra, but the idea still tempts me. I do occasionally pick up the guitar or viola, but not often.

Question 8: Can you tell us about your academic career?

Answer 8: At the age of thirteen I decided I wanted to be a teacher. After college (where I majored in music), I got a job teaching 3rd grade at a private school in New York City, and took courses for a Master's Degree in Music Education. When Ernie and I were married in 1962, we moved to Pittsburgh where he had been admitted as a doctoral student in the Sociology Department. For one year, I taught 4th grade in a working-class neighborhood in a suburb of Pittsburgh. Next, I took a nine-to-five job writing programmed instruction. With nothing to do evenings, I started taking classes in the doctoral program in Educational Research at the University of Pittsburgh. Ernie and I went to West Virginia because we had not yet completed our dissertations and Morgantown was close to Pittsburgh. It took both of us three years to finish. My first book (1972) came from a course I was teaching. It produced many invitations to speak. My second book came out five years later and a third from a student's invitation (I was coauthor). In 1976 I attended the convention of the organization that became ABAI. I became involved in behavior analysis, becoming editor of *The Behavior Analyst* and then President in 1989. That same year, the B. F. Skinner Foundation was founded with Skinner's support. It operated with one graduate assistant until 2005 when it expanded after Ernie and I moved to Cambridge. Through its website, the Foundation gives students, scholars, and the general public worldwide access to what Skinner himself said; through modestly priced books, all his original papers, and audio and video recordings. This service is increasingly important as information and misinformation on the internet proliferate. The Foundation also supervises translations of Skinner's works, arranges for scholarships, and handles rights for photographs, text, and video

requested by television and other media. Lastly the Foundation provides a locus for promoting Skinner's work. Many volunteers contribute examples of where the science is benefitting society and locate and donate archival materials so they can be preserved for future generations.

In 2005, I planned to take one year to revise my second book, but it ended up being a different book and taking 3 1/2 years. Since I left academia my professional activities have increased and show no sign of slowing down. That suits me very well.

Question 9: I don't think Behaviorology is that well known in Norway. Can you tell the readers of the Norwegian Journal of Behavior Analysis what it is?

Answer 9: "Behaviorology" was coined in the late 1980s by a group of professionals who shared the view that "Skinnerian science" needed a name to make it clear it was not an "approach" in psychology. The term "behavior analysis" sounds more like a profession than a science, and by 1990 "behavior analysis" had already gathered a few professionals antithetical to Skinner's analysis. Today, behavior analysts mostly work in applied areas so the term "behavior analysis" appropriately identifies engineering disciplines without specifying one scientific framework.

The term "behaviorology" is currently used by two small groups in the United States. A Google search also shows an architect in Tokyo who is unrelated to the groups in the USA. I belong to the group with the website http://web.me.com/eavargas/ISB/Home.html. This group defines behaviorology as "the science of contingency relations between actions and other events." As proposed by Skinner, it emphasizes contingency selection of properties of behavior at the level of the action class. The group has held small single-track conventions every year since 1988.

Question 10: You are the director of the B.F. Skinner Foundation. The Foundation was founded in 1989. How has the interest for the BFS Foundation been? Can you tell us about the main areas of your work for the BFS Foundation?

Answer 10: The B. F. Skinner Foundation began in 1989 with the publication of *The Behavior of Organisms* which had gone out of print. Publication of out-of-print books continued as the main Foundation activity until 2005, when Ernie and I moved to Massachusetts. Then, activities expanded to include archival work, support of student research, and a website. Future goals include funding faculty research, highlighting exemplary projects, and providing a forum for international discussion. The Foundation continues to be a prime source for information about Skinner and for the promotion of the science underpinning behavior analytic work. As president, I coordinate activities, arrange legal contracts with other organizations (including Harvard University where a large Skinner archive is located), and help with fundraising, ongoing projects, and the website.

Question 11: You have published a book on teaching "Behavior Analysis for Effective Teaching." You taught for more than 30 years at the university level. Can you pinpoint some of the most important issues when you are talking about effective teaching?

Answer 11: To me, the foremost issue is shifting educational practice from aversive control to positive contingencies. Shifting to positive practices requires designing learning activities so that individuals at all levels of proficiency succeed and *see* their improvement. (That is why my book included so much on graphing and shaping). Teachers too, need to see their students enthusiastic and successful. Few teachers have been taught to be sensitive to the timing of

postcedents and to properties of antecedents that are critical for progress. Recently a student told me of a procedure of "prompting" a student to ask for a break when he showed signs of an imminent "meltdown." The time the student spent in "breaks" did prevent tantrums, but a better analysis of contingencies was needed. Instead of prompting breaks when pre-tantrum behavior occurred, break prompts could be timed to reinforce academic skills.

I think behavior analysts underestimate the power of seeing oneself conquer a new level of performance. When consequences depend on the student's own activity rather than solely on teacher-controlled consequences, students respond with what people call "self-esteem", "intrinsic motivation", and "self-discipline".

Question 12: From your writings, you seem to have a special interest in verbal behavior. Some years ago a book called "Relational Frame Theory: A post-skinnerian account of human language and cognition" was published. Do you think a post-skinnerian account is needed? In the RFT book, the authors are quite critical about the definition of verbal. Do you have any thoughts about this?

Answer 12: All behavior can be accounted for by the contingent relations Skinner defined between actions and events in the material world (including events inside the body). Verbal behavior requires a separate analysis because, unlike behavior that operates on the physical world, verbal behavior operates through the actions of other people. But not all behavior that acts on the environment through others is verbal. A baby's cry, for example, may start as a respondent but come under control of consequences provided by a caregiver. The cry does not produce milk directly, the way reaching for a baby bottle does. The cry is mediated: It works only through the action of another person. But crying is not verbal behavior. A cry does not have the proper form. As Skinner defines it, "A mand is characterized by the unique relationship between the form of the response and the reinforcement characteristically received in a given verbal community. It is sometimes convenient to refer to the relation by saying that a mand 'specifies' its reinforcement." A cry does not "specify its reinforcement." Is the baby cold? Does the baby want to be rocked? Is the baby hungry? Is the baby in pain? Later, when a baby approximates the pronunciation of the name of milk in the baby's verbal community, the specification is clearer. "Milk," (in an English speaking community) characteristically brings milk, not a blanket, not rocking, and not a painkiller. Still, the controls must be examined. Uttering an approximation of "milk" is verbal *only* if it is under control of milk deprivation (loosely speaking "wanting milk"), not if it is uttered because it often brings non-specific goodies like being picked up or rocked.

The same analysis goes for tantrums. Tantrums may be shaped by the actions of others, and thus are mediated, but tantrums are not verbal. The form of a tantrum does not "specify its reinforcement." That is why a functional analysis needs to be done. After a functional analysis, attention centers on the form of actions to be shaped. Skinner makes it clear that "the *pattern of response* (italics added) which characteristically achieves the given reinforcement depends, of course, upon the 'language'—that is, upon the reinforcing practices of the verbal community."

In pages 224 to 226 of his book, Skinner refines the definition of verbal behavior. He builds up to the requirements for interaction between two individuals to be verbal. He starts with the physical level, then social but not verbal, and finally verbal. He gives an example of pulling on the reins of a horse to physically turn its head. Pulling reins is not social nor verbal because the horse is moved physically, like pushing someone out of the way. Next he describes touching reins lightly on the neck to turn the horse. Touching reins to the neck could be construed as social, but it is not verbal. The touch is taught as a discriminative stimulus (S^D) for turning. Following any kind of directions (S^D's) qualifies as social, but not verbal behavior: Skinner

makes it clear that *passing bread,* when requested, is not verbal behavior. Verbal behavior requires a form that matches the language practices of a verbal community. The form of the speaker's utterance is shaped by listeners who respond in ways "which have been conditioned *precisely in order to reinforce the behavior of the speaker.*" As Ernie points out, "Skinner's analysis is as much in the linguistics tradition, with its emphasis on form, as it is in the behavioral tradition, with its emphasis on function." Simply because a person shapes an animal to do something, with food or other consequences, does not make the animal's behavior verbal.

Question 13: Behavior analysts claim that behavior analysis is so brilliant. Have you any thoughts on why the number of behavior analysts is quite low?

Answer 13: The science on which most behavior analysis is based elegantly relates behavior to the material world. Science has no place for non-material entities, such as "minds" or "souls." The idea that behavior is not determined by one's inner self is a difficult concept that will take time for the general public to accept. It took many years before technological fields based on an evolutionary framework proliferated in biology. Behavior analysis is still young. A look at trends shows that behavior analysis is growing.

More critical than absolute size is quality. Stephen J. Gould once pointed out that in the entire world there were only about a thousand professional paleontologists. Look at what they accomplish as a field! Quality requires a firm scientific foundation. I believe that programs in behavior analysis should include a lab course to permit direct and controlled experience with the basic contingency relations. In any case, with or without "large" numbers, if behavior analysis maintains a high level of humane and effective procedures, its impact will be substantial.

Question 14: What are your thoughts about the future position of behavior analysis?

Answer 14: I see a bright future for behavior analysis as it separates from psychology. Even with the disparaging comments about the field, almost everyone acknowledges that behavioral treatments "work". A recent issue of *Scientific American*, for example, refers to applied behavior analysis as "evidence-based." Behavior analysts will increasingly be called upon to solve individual behavior problems. As more people see how positive the procedures are (in addition to working well), public support should improve. Already, students and young behavior analysts I talk with in the United States report less resistance than Ernie and I encountered from non-behavioral colleagues. Eventually the science Skinner began will become as acknowledged as biology, with engineering applications correspondingly growing.